



**Iowa STEM Advisory Council  
Broadband Committee  
Initial Action Recommendations**

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**Second Annual  
Action Recommendations**

**February 6, 2015**

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*We plan to continue working to bring high-speed internet  
access to all corners of the state.*

*-Governor Terry Branstad*



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## Background

On September 3, 2013, [Iowa Governor Terry Branstad](#) announced the State of Iowa's new broadband initiative, [Connect Every Iowan](#). The goal of Connect Every Iowan is to position Iowa as the top broadband-connected midwestern state, ready to support new businesses while providing the highest quality education and healthcare services available.

As part of the Connect Every Iowan Initiative, Governor Branstad charged Iowa's [Science, Technology, Engineering, & Mathematics \(STEM\) Advisory Council's](#) Broadband Committee with the creation of a broadband expansion plan for Iowa, with an initial timetable that included delivery of the policy recommendations contained in that report by no later than December 1, 2013.

The STEM Advisory Council Broadband Committee provided that initial [report](#), and its recommendations formed the basis for several versions of broadband legislation considered by the Iowa State Legislature during its 2014 Legislative Session. Ultimately, no broadband legislation was enacted in Iowa in 2014, although it appears likely that Governor Branstad will again encourage the Legislature to take up legislation to expand broadband access, adoption, and use for all Iowans during the 2015 Session.

In, 2013, Governor Branstad noted that "Broadband is the electricity of the future and it's going to be critically important to economic progress. Broadband is also almost certainly the way education of the future is going to be delivered, and we want to make sure that Iowa is on the cutting edge of this very important technology and that we don't have anyone left out."

Additionally, Iowa Lt. Governor Kim Reynolds stressed that, "The expansion of Iowa's broadband network will be achieved through public-private partnerships. Part of a successful task force is making sure all stakeholders are at the table as we walk through what we need to do to implement changes. All stakeholders will have a seat at the table on this task force, so they will have the opportunity to sit down and discuss how we provide and expand broadband access throughout the state of Iowa in a way that benefits everyone."

It is in this continuing spirit that the Iowa STEM Advisory Council Broadband Committee has worked for several months to review its initial broadband recommendations to the State and provide any additional insight into Iowa's current broadband assets, capacities, and needs. This Committee's goals remain to identify strengths and growth areas. In pursuit of those goals, the STEM Advisory Council Broadband Committee submits again its initial policy recommendations along with new content contained in the report below, which seek to address some of the most pressing needs regarding Iowa's broadband access, adoption, and use.



John Carver  
Co-Chair  
Iowa STEM Advisory Council  
Broadband Committee



Robert von Wolffradt  
Co-Chair  
Iowa STEM Advisory Council  
Broadband Committee

## Broadband Use: Information Connectivity

*It's (broadband) hugely significant whether its economics, or healthcare, or education or just people trying to get help. ...So I think our overarching goal is to connect every area that isn't able to get broadband today and encourage the folks who access but aren't using it to subscribe.*

Robert von Wolfradt  
Director and Chief Information Officer  
State of Iowa<sup>1</sup>

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<sup>1</sup> Robert von Wolfradt, Director and Chief Information Officer, State of Iowa; Iowa Communications Network Broadband Matters Campaign, 11/24/2014, <https://www.youtube.com/watch?v=n6uWZFPVKf0>.

## Assessment 1: Iowa must use quality data and standards to measure its broadband efforts.

A well-known maxim is, “You cannot manage what you do not measure.” The Broadband Committee believes Iowa should work to increase broadband access, adoption, and use by residents and businesses in Iowa. In order to develop clear goals and evaluate its efforts, Iowa must use up-to-date and granular data to provide the necessary metrics to benchmark its current broadband landscape and evaluate the elements of Connect Every Iowan.

There are several resources from which Iowa can draw useful data, including broadband availability information by census block and Iowa-specific residential and business broadband adoption data from [Connect Iowa](#); federal agency research by the Federal Communications Commission or the National Telecommunications and Information Administration (NTIA); or independent network speed information from organizations like Akamai.

Further, benchmarks and even the definition of “broadband,” a.k.a. “high-speed Internet,” can shift over time. In its sixth broadband deployment report, adopted in July 2010, the FCC updated the definition of broadband from 200 Kbps download/200 Kbps upload to 4 Mbps download/1 Mbps upload, which was also considered by that agency to be the “National Target Speed,” or the target speed the FCC believes all U.S. households should be able to access.<sup>2</sup> In December 2014, the agency voted to require any broadband provider receiving a subsidy from the Connect America Fund (CAF) to build a network capable of providing broadband service of at least 10 Mbps download/1 Mbps upload, an increase from the previous CAF requirement of 4 Mbps download/1 Mbps upload.<sup>3</sup> In its 2015 Broadband Progress Report adopted in January 2015, the FCC updated the broadband benchmark speed it will use to determine if broadband is being deployed in a reasonable and timely fashion, with a new National Target Speed of 25 Mbps download/3 Mbps upload.<sup>4</sup> These shifts in policy terms and definitions underscore the need for up-to-date data and analysis to enable effective management.

While broadband availability data from Connect Iowa indicates that over 98% of Iowa households can access Internet service at its most basic speed (768 Kbps download/200 Kbps upload), statewide availability begins to sharply decrease at 6 Mbps download/1.5 Mbps upload (with only 82.4% of Iowans able to access broadband at these speeds), and only 73.4% of Iowans able to access broadband at speeds of at least 25 Mbps download/3 Mbps upload.<sup>5</sup> Broadband speeds are an ever changing dynamic. The State’s desire is to be forward looking

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<sup>2</sup> **Federal Communications Commission**; *Sixth Broadband Deployment Report*, 7/16/2010, [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-10-129A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-10-129A1.pdf).

<sup>3</sup> **Federal Communications Commission**; *Report and Order: In the Matter of Connect America Fund*, 12/11/2014, [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-14-190A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-14-190A1.pdf).

<sup>4</sup> **Federal Communications Commission**; *2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment*, 1/29/2015, [http://transition.fcc.gov/Daily\\_Releases/Daily\\_Business/2015/db0206/FCC-15-10A1.pdf](http://transition.fcc.gov/Daily_Releases/Daily_Business/2015/db0206/FCC-15-10A1.pdf).

<sup>5</sup> **Connect Iowa** October 2014 Broadband Availability Data.

and strive to meet and exceed established FCC standards understanding that there will be a constant growth in demand for bandwidth.

Connect Iowa's residential adoption survey research tells us that only 71% of Iowa households have adopted broadband, indicating a real and significant digital divide in Iowa, which is more pronounced among at-risk demographic groups like low-income households (adoption rate = 45%), rural households (adoption rate = 68%), or African-American households (adoption rate = 47%).<sup>6</sup> Because many of our broadband goals are directly related to economic development, it is also useful to have Iowa-specific business broadband adoption data – Connect Iowa's data tells us that 81% of Iowa businesses use broadband every day, but that 31% of Iowa businesses want faster Internet service but cannot get it.<sup>7</sup>

These data can be compared to complementary sources within the public and private sectors for the purposes of deeper understating and quality assurance. For instance, the NTIA conducted a national survey released in 2011 that estimated the residential broadband adoption rate at 67.5%.<sup>8</sup> Given NTIA's margin of error in its survey methodology, this figure is similar enough to the Connect Iowa data to be complementary.

## RECOMMENDED ACTION 1:

These criteria (broadband adoption rates; network speeds; and an analysis of the impact broadband is having on Iowa's economy) are an excellent index upon which Iowa can evaluate its efforts moving forward. We also believe affordability is an important metric for the State to track. The Committee recommends using these criteria, and allocating resources to maintain within Iowa the capacity to collect and analyze the data for these criteria, which should be collected from the most recent and most granular resources available on a continuing basis.

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<sup>6</sup> 2014 **Connect Iowa** Residential Technology Assessment, <http://www.connectednation.org/residential-survey-data?state=iowa>.

<sup>7</sup> 2014 **Connect Iowa** Business Technology Assessment, <http://www.connectednation.org/business-trends?state=iowa>.

<sup>8</sup> "Digital Nation – Expanding Internet Usage." NTIA. February 2011.

## Broadband Use: Government Services

*We are currently about 67% electronic; in doing that we need large pipes. Broadband is the answer to that. It will make us more efficient...If you want to buy something...and you live in Lyon County for example and you don't want to drive to Des Moines...you don't have to. You can get it delivered to your doorstep. The same function happens with government services. You can renew your license online, you can pay fines online. Many of those things are not available unless you have broadband available in those remote areas.*

Ken Bosier  
Director of Information Technology  
Iowa Judicial Branch<sup>9</sup>

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<sup>9</sup> Ken Bosier, Director of Information Technology, Iowa Judicial Branch; Iowa Communications Network Broadband Matters Campaign, 11/17/2014, <https://www.youtube.com/watch?v=beGXzturmPM>.

## Assessment 2: Establish a coordinating body and council of information and accountability surrounding current availability and adoption initiatives in the State

The STEM Broadband Committee believes that public-private partnerships are necessary to advance Iowa's broadband landscape. Public-private partnerships, by definition, include many stakeholders. At a state and local level, many of our broadband stakeholders are involved in separate efforts, initiatives, and discussions about how to positively impact their state, their region, or their community. These activities contain a wealth of best practices information on strategies and tactics that can have a demonstrable and measureable impact on broadband access, adoption, or uses.

In addition, other states within the United States and in the Midwest have ongoing broadband projects and initiatives that, either through success or failure, may yield valuable insight or best practices that could be leveraged here in Iowa and its communities.

To capitalize on these information resources, the Committee would recommend that the state establish and promote a best practices clearinghouse of information surrounding current availability and adoption initiatives in Iowa.

This clearinghouse would work to coordinate existing resources and services, and utilize existing state broadband stakeholders for support, such as the STEM Advisory Council Broadband Committee, the Iowa Communications Network, and Connect Iowa.

The Iowa Broadband Best Practices Clearinghouse should also work with federal agencies, such as the FCC, NTIA, and U.S. Department of Agriculture, to incorporate federal activities (like the creation of the Public Safety Broadband Network by the FirstNet Authority) into the clearinghouse. The IBBCP could also explore the creation of standing resources for stakeholders such as a Dig Once database, or a fiber optic database. It should also work to catalog the status and impact of broadband projects funded by the American Recovery and Reinvestment Act, as well as the impact of FCC changes to the US Universal Service Fund, on Iowa's broadband landscape.

### RECOMMENDED ACTION 2:

The State of Iowa should streamline the State's Broadband program by focusing responsibility in the Office of The Chief Information Officer (OCIO) agency to:

- ✓ coordinate Iowa's broadband public-private partnership initiative
- ✓ ensure other agency programs are aligned
- ✓ be accountable
- ✓ resolve issues



- ✓ further partnerships
- ✓ develop the clearinghouse; and
- ✓ at a minimum, annually report on progress.

Representation specifically from the OCIO should be added to the Iowa Telecommunications and Technology Commission (ITTC), the State Interoperability Board, and the FirstNet Broadband Program. Further, the State should align the already established Technology Advisory Council with the Broadband program. The office responsible should include the telecommunications industry, K-12, and others.

## Broadband Use: Healthcare

*There are tremendous opportunities with telemedicine. When technology improved and we found there was a greater need in the healthcare community for broadband connectivity we were happy to have access on a fiber network in rural Iowa. ...Patients that once upon a time would have been transferred to a different facility we were able to monitor in our local facility with the same expertise. ...Certainly there's a cost savings to engaging the patients at a local basis. ...it's a more economical position especially when it can be done just as safely...*

Daren Relph, CEO  
Wayne County Hospital<sup>10</sup>

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<sup>10</sup> Daren Relph, CEO, Wayne County Hospital; Iowa Communications Network Broadband Matters Campaign, 11/17/2014, <https://www.youtube.com/watch?v=X33VfZ2nxpk>.

## Broadband Use: Public Safety

*FirstNet is a national public safety broadband network for public safety users for data. ...Law enforcement uses data for their in-car systems such as sharing videos; we can pull records, search databases, run wireless cameras from the car. ...We live in a mobile world. ...FirstNet was designed because the commercial networks are becoming busier and busier and we need...a reliable network to use.*

Thomas Lampe, Interoperability Officer  
State of Iowa, Department of Public Safety<sup>11</sup>

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<sup>11</sup> Thomas Lampe, Interoperability Officer, State of Iowa Department of Public Safety; Iowa Communications Network Broadband Matters Campaign, 11/17/2014, <https://www.youtube.com/watch?v=YRFjYDcsNZw>.

## **Assessment 3: Iowa should establish a structure within which it can give incentives to broadband providers that serve the specific needs of the providers, within specified guidelines.**

Through the comments it has received, the Iowa broadband availability data that is available, and the direction toward subsidizing broadband network deployment taken by the FCC in recent years, it is clear to this Committee that areas in Iowa currently unserved or underserved by broadband include areas in which a return on investment using traditional financial funding models may not be feasible.

In addition, the State of Iowa is not seeking basic broadband availability for its citizens and businesses, but a robust and ultra high-speed broadband infrastructure that can jump-start innovation and provide for the current and future needs of its citizens, businesses, healthcare sector, and research institutions.

To help achieve these availability goals, the Committee recommends that Iowa establish a structure within the state's broadband entity that can, within specified guidelines, provide incentives to applying broadband providers who will provide robust and ultra high-speed broadband services that meet or exceed the FCC's new goal of 25 Mbps download/3 mbps upload. The Committee recommends that in order to efficiently use limited state resources applicants be required to use the incentives to deploy networks and services that have long life expectancies and are "upward scalable" to meet growing future demands.

This broadband deployment incentive structure could also examine policy recommendations within other states or at the federal level that could apply to Iowa.

### **RECOMMENDED ACTION 3:**

- Direct the OCIO in Recommended Action 2 to include attention to backbone, middle mile, and last mile infrastructure.
- Incorporate tax code-based incentives, state loan guarantees or grants, and/or regulatory reform efforts to reduce operating expenses.
- Include
  - tax incentives for build-outs
  - loans/grants for investments
  - Regulatory reforms that may include uniform siting and permitting, and
  - Dig-once programs.

## Broadband Use: Economic Development

*...This is a global economy. Everything about our economic development agenda is basically ‘How do you connect with that broader world?’ When you consider that 95% of our customers live outside of the United States then you have to really say ‘We’re going to grow our businesses small and large’...that’s why connectivity is so important. It brings that big world and it brings it to Iowa. ...Look at John Deere for instance. ...one of their growing industries is their IT department and it is all about making sure that farmer in the field can ...have precision agriculture...and be able to download all kinds of information without interruption.*

Debi Durham, Director  
Iowa Economic Development Authority<sup>12</sup>

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<sup>12</sup> Debi Durham, Director, Iowa Economic Development Authority; Iowa Communications Network Broadband Matters Campaign, 11/24/2014, <https://www.youtube.com/watch?v=6jXKfNvgNM8>.

## Assessment 4: Iowa should expand and encourage efforts to increase the broadband adoption rate and support for residential and business users.

With 29% of Iowa households not using broadband that is already available, and 16,000 businesses in Iowa not utilizing high-speed Internet services to drive growth and create jobs, the Committee recommends that the State of Iowa expand and encourage efforts within the state to increase broadband adoption rates.<sup>13</sup> (The number of Iowa businesses not utilizing broadband has fallen by 30%, from 23,000 non-adopting Iowa businesses in 2012 to 16,000 today.)

Broadband is a tool that must be used to bring benefits and increase quality of life. In addition, access to and the ability to use technology is an essential building block to the creation of a skilled workforce that is required by today's economy.

Knowing that there are significant barriers to broadband adoption in Iowa, particularly among at-risk populations (such as senior citizens) and small businesses, the state should utilize a variety of tactics to attack these barriers.

### RECOMMENDED ACTION 4:

Direct the OCIO in Recommended Action 2 to include community strategic technology planning such as

- an existing element of the Connect Every Iowan Initiative, the Connected Community Engagement Planning process (which to date has awarded eighteen Iowa communities Connected Community Certifications, with 64 communities that have completed or are currently participating in the planning process);
- digital literacy training;
- digital commerce professional training for small businesses;
- job and workforce skills training;
- tax credits to corporations for the donation of broadband-enabled devices; and
- support for community institutions functioning as public computing and training centers, operating through a public-partnership framework.

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<sup>13</sup> 2014 **Connect Iowa** Residential Survey and 2014 **Connect Iowa** Business Survey.

## Broadband Use: Education

*The last six years the rate of change has accelerated exponentially. Six years ago in Iowa there were only 12 one-to-one (school) districts in the state. That's one device per student. ...In six years we've gone from 12 to hundreds of schools and thousands of children having access to digital devices and...students are able connect with other learners globally. In Iowa, we're breaking new ground. ...The challenge is when they (students) go home and as you get out into the rural areas...bringing broadband to those rural areas is a challenge. Bringing broadband to rural America levels the playing field.*

John Carver, Superintendent  
Howard-Winneshiek School District<sup>14</sup>

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<sup>14</sup>John Carver, Superintendent, Howard-Winneshiek School District; Iowa Communications Network Broadband Matters Campaign, 11/18/2014, <https://www.youtube.com/watch?v=1WCtoQ-S48>.

## Assessment 5: The State of Iowa should grant further latitude to school districts on using school infrastructure funding.

The FCC is currently in an ongoing process of reforming the section of the Universal Service Fund known as the “E-rate Program” to more robustly fund broadband connectivity at schools and libraries. Beginning with an Order it adopted on July 23, 2014, which began to repurpose existing resources to schools and libraries for broadband connectivity, as well as the dedication of new funds for internal Wi-Fi connections, the FCC began the most significant changes to the E-rate Program since its inception in 1997.<sup>15</sup> Following its vote in July, the FCC took further action on December 11, 2014, adopting an Order that lifted a cap on E-rate funding, set at \$2.5 billion per year in 1997, and raising the cap to \$3.9 billion per year, making the E-rate program the third largest source of federal government financial support to schools in the U.S. This Order also makes several programmatic changes designed to improve school and library access to broadband connectivity.<sup>16</sup>

### RECOMMENDED ACTION 5:

The Committee recommends the State of Iowa should craft and enact legislation to adopt the broadest definition of technology infrastructure possible and to adjust the Iowa Code to allow schools the flexibility to commit infrastructure funds, E-rate funds or other funding sources to leverage existing funding to directly support Broadband access for students in the schools.

The Committee recommends that the State of Iowa provide schools the flexibility to secure alternate funding resources to expand broadband.

The Committee recommends that the State of Iowa identify or provide a source of funding for broadband buildout. This funding should be authorized for use in meeting any matching fund requirements associated with federal funding or any other available sources of funding.

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<sup>15</sup> **Connected Nation** Policy Brief, *E-rate Modernization Order*. 8/4/2014.

[http://www.connectednation.org/sites/default/files/bb\\_pp/cn\\_brief\\_e-rate\\_modernization\\_order.pdf](http://www.connectednation.org/sites/default/files/bb_pp/cn_brief_e-rate_modernization_order.pdf)

<sup>16</sup> **Connected Nation** Policy Briefs, *FCC Increases E-rate Cap to \$3.9 billion; Further Reforms the Program to Support Connectivity Goals*, 12/11/2014, [http://www.connectednation.org/sites/default/files/bb\\_pp/e-rate\\_modernization\\_cap\\_increase\\_connected\\_nation\\_policy\\_brief.pdf](http://www.connectednation.org/sites/default/files/bb_pp/e-rate_modernization_cap_increase_connected_nation_policy_brief.pdf) and *FCC Releases Details on Expanded E-rate Program*, 12/22/2014, [http://www.connectednation.org/sites/default/files/bb\\_pp/policy\\_brief\\_on\\_e-rate\\_december\\_order.pdf](http://www.connectednation.org/sites/default/files/bb_pp/policy_brief_on_e-rate_december_order.pdf).



## Links to Appendices

- 1) [Press Release](#) from the Office of Iowa Governor Terry Branstad announcing the Connect Every Iowan Initiative.
- 2) [Press Release](#) from Connect Iowa announcing the Connect Every Iowan Initiative.
- 3) [Iowa STEM Innovation Proposal for 2013-14 regarding broadband.](#)
- 4) Iowa STEM Advisory Council Broadband Committee [First Annual Action Recommendations Report](#) – 12/1/2013.
- 5) [Catalog](#) of Iowa STEM Advisory Council Broadband Committee information and artifacts, including hyperlinks to the Committee Roster, meetings/agendas of the Committee, public feedback and comments received by the Committee, relevant documents and links, and contact information.
- 6) Iowa Broadband Availability Map showing availability of broadband at [10 Mbps download/1.5 Mbps upload](#) or greater.
- 7) Iowa Broadband Availability Map showing availability of broadband at [25 Mbps download/3 Mbps upload](#) or greater.
- 8) Connect Iowa [broadband availability table](#) by speed tier as of October 2014.
- 9) Iowa Broadband Availability [Map showing Underserved Households in Iowa.](#)
- 10) Iowa Broadband Availability [Map showing the average residential broadband download speed in Iowa by county.](#)
- 11) Connect Iowa Residential Broadband Adoption Research at <http://www.connectednation.org/residential-survey-data?state=iowa>.
- 12) Connect Iowa [Business Broadband Adoption Research Infographic.](#)
- 13) STEM Advisory Council [Internet Bandwidth Presentation](#) – 3/5/2013.
- 14) Iowa School Finance Information Services [School Internet Bandwidth Survey](#) – 3/1/2013.